Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Currently amended): [[An]] A full mesh optical backplane for an electronic system comprising a plurality of waveguide plates arranged in a stack, a plurality of circuit board assemblies mounted on the stack at spaced stations, power distribution means for each circuit board assembly, the stack of waveguide plates having a plurality of plates of side-by-side optically isolated transmitting and receiving waveguide paths passing through each plate, and the paths being optically accessible at spaced pairs of adjacent optically isolated receiving and transmitting ports at the stations on each plate, each circuit board having a plurality of electro-optical interfaces in optical registry with transmitting and receiving paths on the plates ~~whereby each circuit board assembly communicates with every other circuit board assembly in the~~ system by way of a full mesh of said dedicated optically isolated transmitting and receiving paths.

Claim 2 (Canceled)

Claim 3 (Currently amended): An optical backplane as defined in claim [[2]] 14 in which the waveguide plates are circular to minimize the length of optical paths and thereby to minimize transmission delays.

Claim 4-13 (Canceled)

Claim 14 (Currently amended): An optical backplane for an electronics system comprising a plurality of waveguide plates arranged in a stack, a plurality of circuit board assemblies mounted on the stack at spaced stations, power distribution means for each circuit board assembly, the stack of waveguide plates having a plurality of plates of side-by-side optically isolated transmitting and receiving waveguide paths passing through [the] each plate, and the paths being optically accessible at spaced pairs of adjacent optically isolated receiving and transmitting ports at the stations on [the] each plate, each circuit board having a plurality of electro-optical interfaces in optical registry with ~~transmit~~ transmitting and ~~receive~~ receiving paths whereby each circuit board assembly communicates with every other circuit board assembly in the system.

Claim 15-17 (Canceled)

Claim 18 (Currently amended): A waveguide plate for an optical backplane, the plate having a surface, the plate comprising at least one pair of side-by-side optically isolated transmitting and receiving waveguide paths passing through the plate with the optical paths being optically accessible at spaced pairs of adjacent optically isolated receiving and transmitting ports at the surface of the plate, the receiving and transmitting ports being recesses defining positive locating means for an electro-optical interface and for receiving another set of waveguides to extend the optical paths directly onto a circuit board assembly.

Claim 19-22 (Canceled)